

Patent Claims

1. A device for pressing a rack onto a pinion, having a pressure piece and a stop element, a spring element which is arranged between the pressure piece and the stop element exerting the first stage of at least two stages of the pressure which follow one another and press the pressure piece against the rack, characterized in that the pressure piece (2) and the stop element (3) in each case have contact faces (17a, 17b) which are oriented toward one another and are arranged at a distance from one another in a basic position, at least one of the contact faces (17a, 17b) being of resilient configuration, with the result that the second stage of the pressure begins as soon as the contact faces (17a, 17b) make contact with one another.
2. The device as claimed in claim 1, characterized in that the pressure piece (2) has a circumferential surface (5) and a pin (7) which protrudes in the direction of the stop element (3) and the exposed end of which is configured as a contact face (17a).
3. The device as claimed in claim 2, characterized in that the pin (7) extends coaxially with respect to the axis of the pressure piece (2).
4. The device as claimed in claim 1, 2 or 3, characterized in that the stop element (3) has an annular circumferential surface (14) and an end wall (15) which is configured as a contact face (17b).
5. The device as claimed in claim 4, characterized in that the spring element (4) is arranged substantially within a hollow space of the pressure piece (2) and is clamped

between a base part (6) of the pressure piece (2) and the end wall (15) of the stop element (3).

6. The device as claimed in claim 5, characterized in that the spring element is configured as a helical spring (4), in the center of which the pin (7), starting from the base part (6) of the pressure piece (2), extends in the direction of the end wall (15).
7. The device as claimed in one of claims 2 to 6, characterized in that the pin (7) is configured in one piece with the pressure piece (2).
8. The device as claimed in one of claims 1 to 7, characterized in that the pressure piece (2) and the stop element (3) each have a second contact face (18a, 18b) which are oriented toward one another and, in the basic position, are at a distance from one another which is greater than the distance of the first contact faces (17a, 17b) from one another.
9. The device as claimed in claim 8, characterized in that the distance between the first contact face (17a) of the pressure piece (2) and the first contact face (17b) of the stop element (3) is from 0.02 mm to 0.1 mm, preferably 0.05 mm, in the basic position.
10. The device as claimed in claim 8 or 9, characterized in that the distance of the second contact face (18a) of the pressure piece (2) from the second contact face (18b) of the stop element (3) is from 0.15 mm to 0.3 mm, preferably 0.2 mm, in the basic position.
11. The device as claimed in claim 8, 9 or 10, characterized in that the exposed end, which is oriented in the

direction of the stop element (3), of the circumferential surface (5) of the pressure piece (2) is configured as a second contact face (18a).

12. The device as claimed in claim 4 and one of claims 8 to 11, characterized in that the end, which is oriented in the direction of the pressure piece (2), of the annular circumferential surface (14) of the stop element (3) is configured as a second contact face (18b).
13. The device as claimed in one of claims 8 to 12, characterized in that the second contact face (18a) of the pressure piece (2) and the second contact face (18b) of the stop element (3) are configured in such a way that they represent an end stop for the movement of the pressure piece (2).
14. The device as claimed in one of claims 1 to 13, characterized in that the pressure piece (2) is arranged in a receptacle space (8) of a steering housing (9), a sliding foil (10) being arranged between the inner wall of the receptacle space (8) and the circumferential surface (5) of the pressure piece (2).
15. The device as claimed in claim 14, characterized in that the sliding foil (10) has a sliding base (11) as a bearing point for the rack (1).
16. The device as claimed in claim 14 or 15, characterized in that the sliding foil (10) is arranged in the receptacle space (8) by means of an interference fit.
17. The device as claimed in claim 14, 15 or 16, characterized in that the stop element is configured as a

setting screw (3) which can be screwed into the receptacle space (8).

18. The device as claimed in one of claims 1 to 17, characterized in that the pressure piece (2), the stop element (3) and the spring element (4) are formed from metal.
19. A device for pressing a rack onto a pinion, having a pressure piece and a stop element, characterized in that the pressure piece (2) and the stop element (3) in each case have contact faces (17a, 17b) which are oriented toward one another and bear against one another in a basic position, at least one of the contact faces (17a, 17b) being of resilient configuration.
20. The device as claimed in claim 19, characterized in that the pressure piece (2) has a circumferential surface (5) and a pin (7) which protrudes in the direction of the stop element (3) and the exposed end of which is configured as a contact face (17a).
21. The device as claimed in claim 19 or 20, characterized in that the pin (7) extends coaxially with respect to the axis of the pressure piece (2).
22. The device as claimed in claim 19, 20 or 21, characterized in that the stop element (3) has an annular circumferential surface (14) and an end wall (15) which is configured as a contact face (17b).
23. The device as claimed in claim 22, characterized in that the contact face (17b) of the stop element (3) is deflected or clamped in the basic position by the contact face (17a) of the pin (7).

24. The device as claimed in one of claims 20 to 23, characterized in that the contact face (17a) of the pin (7) is of cambered configuration in order to generate a progressive spring characteristic diagram.
25. The device as claimed in one of claims 20 to 24, characterized in that the pin (7) is configured in one piece with the pressure piece (2).
26. The device as claimed in one of claims 19 to 25, characterized in that the pressure piece (2) and the stop element (3) each have a second contact face (18a, 18b) which are oriented toward one another and, in the basic position, are at a distance from one another.
27. The device as claimed in claims 20 and 26, characterized in that the exposed end, which is oriented in the direction of the stop element (3), of the circumferential surface (5) of the pressure piece (2) is configured as a second contact face (18a).
28. The device as claimed in claims 22 and 26, characterized in that the end, which is oriented in the direction of the pressure piece (2), of the annular circumferential surface (14) of the stop element (3) is configured as a second contact face (18b).
29. The device as claimed in claim 26, 27 or 28, characterized in that the second contact face (18a) of the pressure piece (2) and the second contact face (18b) of the stop element (3) are configured in such a way that they represent an end stop for the movement of the pressure piece (2).

30. The device as claimed in one of claims 19 to 29,
characterized in that the stop element is configured as a
setting screw (3).